TAYLOR (H.L.)

IMPROVED APPARATUS FOR POTT'S DISEASE OF THE SPINE.

BY

HENRY LING TAYLOR, M. D.,
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REPRINTED FROM THE CANADA MEDICAL RECORD, NOVEMBER, 1893.

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IMPROVED APPARATUS FOR POTT'S DISEASE OF THE SPINE.*

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The indications for treatment in Pott's disease are to relieve the carious vertebræ from pressure and shock with a minimum of confinement and a maximum of comfort. There are no more powerful stimuli to general and local nutrition in these cases than the relief from mechanical and nervous strain, and the access to fresh air made possible by the use of an efficient spinal splint. This should be in effect an artificial and temporary backbone, giving firm support and protection at the point of disease, and receiving, partially at least, the strains that would otherwise fall upon the diseased vertebral bodies, and assist in their disintegration.

Recumbency for short periods and abstention from standing and walking for longer periods are necessary during the

* Exhibited to the Surgical Section of the Pan-American Medical Congress, Washington, September 6, 1893.

acuter stages, but the prime indication from the start is for definite spinal support, for which no period of recumbency alone, however long or strict, can be successfully substituted.

It is now over thirty years since Dr. C. Fayette Taylor described* the early diagnostic signs of Pott's disease, and showed the indication for treatment by antero-posterior support and protection, that is, by leverage fixation. His later improvements in the apparatus designed to meet this indication are shown in this paper.

Much ingenuity has been wasted in the endeavor to apply a continuous extending force to the spine, in an apparatus to be worn on the person. As this appears to be a practically insoluble problem, it is fortunate that a vertically extending force is not needed. Antero-posterior leverage alone is used, because by that means pressure can be most directly and perfectly transferred from the diseased vertebral bodies in front to the sound arches behind.

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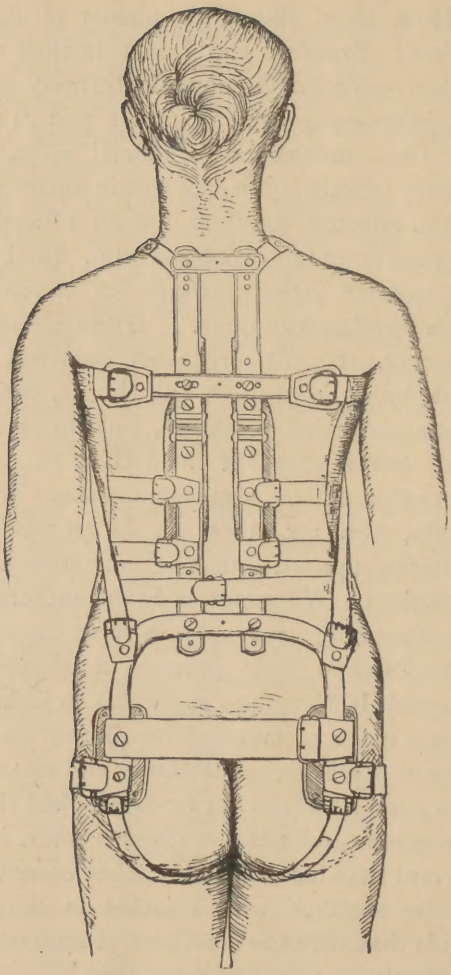
* The mechanical treatment of angular curvature, or Pott's disease of the spine, New York State Medical Society, February, 1863.

How then about the plaster of Paris jacket? Bradford and Lovett in their excellent work on Orthopedic Surgery give the following answer, pp. 60, 61 and 71:

"The undoubted beneficial effect of plaster jackets is due, not to the separation of the affected vertebræ, but to a fixation support in an improved position. In short the plaster jackets afford an excellent antero-posterior support." "Unfortunately, however, the plaster jacket does not of itself, by its hold upon the thorax, maintain a continued extension, but the jacket and thorax so adapt themselves to each other that active suspension ceases. The jacket, however, does act as an antero-posterior support, until it becomes loose and inefficient." We prefer, as do the authors of the foregoing sentences in most cases, if I understand their practice, a properly adapted steel leverage apparatus to jackets of any make or material, on account of its greater precision, adjustability and cleanliness; but it should not be overlooked that as regards results the workman is more important than his tool, and that better results will be obtained with a jacket in skillful hands than with the most perfect apparatus carelessly or unintelligently used.

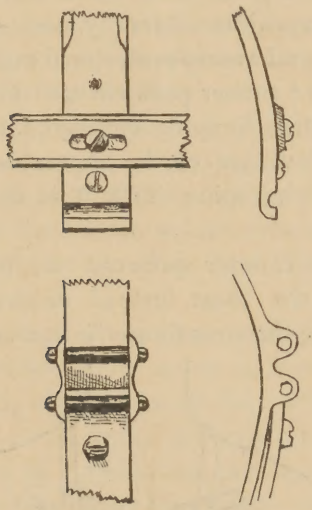


The improved spinal apparatus is shown in the figures.

It differs from the apparatus shown to the New York State Medical Society in 1863 in the following points:

1. The vertical parallel bars have been lengthened, and end in hooked pieces, passing well over the shoulders near the neck.

2. The hinges differ somewhat in construction

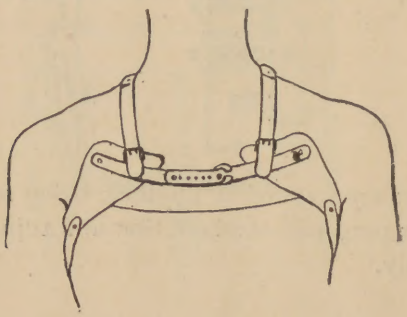


and are screwed to the bars, being retained for purposes of adaptation and adjustment only.

3. The horizontal hip-band is discarded, and is replaced by a rigid steel bar or vertical hip-band having the shape of an inverted U; to the upper horizontal part of this band the lower ends of the vertical bars are firmly attached. The ends of the ∩-shaped band are protected by hard-rubber plates, and rest in the post trochanteric sulcus on either side, and together with the hooked pieces at the base of the neck, fix the apparatus laterally, and assist in vertical and antero-posterior fixation.

4. Hard rubber pads are used instead of the soft pads formerly employed, to transmit the leverage of the apparatus to the region of the spine which it is desired to protect.

5. For counter pressure at the upper part of the chest, instead of the straps encircling the arms formerly used, a "chest piece"



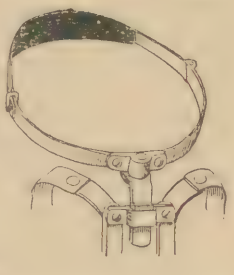
is employed, consisting of two triangular hard-rubber pads, fitted below the clavicles and resting upon the pectoral muscles at the sides of the chest; these pads are joined by a steel bar curved forward to escape the chest, and so contrived that the distance between the plates may be increased or diminished at will. The chest-piece is buckled to straps coming from the hooked shoulder-pieces above, and below it is strapped to buckles at the angles of the ∩ hip band on either side, leaving the arms and axillæ free.

6. The apron which holds the whole apparatus forward reaches to the posterior border of the axilla on either side, and from the trochanter to the arm laterally, and is secured by straps and buckles to the apparatus.

7. Perineal straps may pass from the lower border of the apron in front, under the thighs, to the ends of the vertical hip-band to aid in fixing the apparatus.

It is to be understood that appropriate modifications of the form of the apparatus are made to correspond with the indications presented by disease in the different regions of the spine, and by the character

and amount of the deformity. Most cases above the ninth dorsal will require, in addition, Dr. Taylor's circular pivoted head-support or chin rest, which is easily fitted to this apparatus.



The treatment of this affection, while remarkably satisfactory in the main, would be less tedious, if the nature and serious character of the disease were earlier recognized, and proper management inaugurated without delay. The first months of the affection often pass entirely unnoticed, owing to the absence of pain, and if, later, symmetrical pains at the sides, over the abdomen or down the legs appear, they are frequently attributed to digestive or other troubles. The short, rapid breathing caused by disease in the upper dorsal region may lead to the suspicion of pulmonary trouble, as in a case which came after having been treated two years for asthma. The breathing became natural after proper support was applied, and the disease was entirely cured with but

slight deformity. In another case of disease in the lower dorsal region, poor nutrition and pains were attributed to indigestion, and valuable time was lost in the endeavor to correct the digestive disturbance, which together with severe pains in the legs permanently disappeared soon after the spine was properly supported, with speedy and marked improvement in the patient's health. An early diagnosis can often be made before the appearance of pain or deformity, from spinal stiffness, shown in the attitude and movements, the tendency to lean on chairs and tables or upon the mother's lap for support, the careful shuffling gait, failing health and nocturnal restlessness. At this stage the happiest results follow thorough treatment, for halfway measures taken with the idea that the trouble will disappear in a few weeks are of no avail, even in the earliest stages. The symptoms will temporarily subside, as indeed they frequently do for a time without treatment, only to reappear later with increased intensity, unless the spine is efficiently and persistently supported.

It should never be forgotten in the treatment of these cases that an apparatus

is intended to be an aid in the general and local hygiene of the patient, who should be under constant supervision and regulation, and such changes made in the mechanical appliance and other elements of management as the progress of the case may demand.